In Vitro Fertilization

Embryo Transfers

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Part of the in vitro fertilization process involves decisions about how many embryos should be transferred into the uterus per cycle. The greater the number of transfers, the higher the success rate per cycle. But, the more transfers, the greater the chances of multiple pregnancies, which increases the risks to the mother and fetuses—particularly of preterm delivery, which pushes up perinatal mortality rates and costs.

Single embryo transfers are the safest, but ultimately who decides the number transferred? Rules within the United Kingdom advise 1 or 2 per cycle, but a survey recently found countries with higher upper limits, up to 6 or more, or even no set limit.[1]

How regulations are imposed or enforced is a complex business. Few would argue that transferring 8 embryos is safe practice and, indeed, Ms. Nadya Suleman's doctor in California is being investigated for negligence. But how are single transfers encouraged or rewarded? Dutch research indicates that extensive couple education is helpful and certainly empowers prospective parents to choose for themselves the number of embryos transferred.[2]

The scientists found that just less than half of intensively educated couples chose single transfers compared with one-third in the standard practice group. They suggest creating awareness through Web-based information that may expand knowledge and inform decision making, but unregulated websites could be dodgy.

Already there are examples of people pushing beyond legal boundaries with Web sites that offer to match sperm donors to would-be mothers for a price, but such donors are not protected by official clinic statutes and could find themselves being liable for subsequent child support after being legitimately traced.[3]

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Maternal Mortality Rates

World Maternal Mortality Rates

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Maternal mortality is measured by the number of mothers that die for every 100,000 live births. Each maternal death is a tragedy and reducing the number of deaths lies at the heart of the millennium development goals (MDG 5) that were set at the turn of the century with a target date of 2015. With 5 years to go, the United Nations and World Health Organization are reflecting on the chances of achieving these goals. The following statistics reflect progress so far:

- Over the past 20 years maternal mortality rates have fallen by one-third; actual numbers per year have dropped from 550,000 to 350,000.
- MDG 5 is not on track and vast discrepancies remain between and within countries.
- 99% of maternal deaths occur in developing countries; the vast majority of these countries are in Africa and South Asia.
- The countries with the largest number of deaths are India, Nigeria, Democratic Republic of Congo, Afghanistan, Bangladesh, Ethiopia, Indonesia, Kenya, Pakistan, Sudan, and Tanzania, where a combined 65% of all deaths occur.
- With 10% of the world's population, Africa has half the maternal deaths, two-thirds of the AIDS burden, and 90% of all malaria deaths.

Child mortality (MDG 4) is concerned with deaths of children under age 5 years, divided into neonatal/newborn and child deaths. Progress is being made in reducing childhood deaths, but 9 million children still die each year; 40% are neonates.

The fact that 60 million deliveries take place at home is a critical determinant of both maternal and neonatal mortality rates and this goes to resource allocation, education, and political will. Various commentators proclaim on the way forward[1,2] (and point to sustained funding and concentration on the pockets of intransigence), but this reviewer believes differently.

This reviewer believes that contraceptive technology has developed far ahead of maternal and fetal services to the poorest poor. Women cannot die in childbirth without conception. Concentrating on family planning should take priority in the areas where it is needed most. The rest will follow.

References

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Celebral Palsy

Cerebral Palsy and Gestational Age

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Cerebral Palsy Among Term and Postterm Births

Moster D, Wilcox AJ, Vollset SE, et al.

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Although there is a known association between preterm delivery and cerebral palsy (CP), the majority of CP sufferers are born at term. The sheer weight of numbers makes this a statistical certainty because CP is a rare disorder at any gestational age, about 1 to 2 per 1000 overall. But careful examination of CP incidence and gestational age even within the definition of term yields interesting findings.

In Norway, Moster and colleagues correlated CP incidence with accurate gestational aging and found a U-shaped curve from 37 to 42 weeks. Their data were robust, which begs the question as to whether birth outside strict "term" is a risk for CP or whether babies predisposed to CP have a disturbance in the timing of their delivery. Whatever the mechanism, the underlying pathology needs to be better understood before prophylactic inductions are warranted to prevent CP.

Miscellaneous

Snippets

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Light Weights

Although very low birth weight babies constitute only 2% of all deliveries in the United States, they account for half of all infant deaths. Presenting decades' worth of data, Lasswell and colleagues[1] reiterate the advantages of delivering these infants in tertiary hospitals with neonatal intensive care units because the infant mortality statistics are consistently better in these specialized facilities than in general care units.

Fighting Fit

American soldiers may not always be fit for fighting—if they are pregnant. Although sexual relations are explicitly forbidden between soldiers, it seems that these orders are not always obeyed. During Operation Iraqi Freedom/Operation Enduring Freedom, pregnancy was the primary reason for the evacuation of female personnel from the combat zone.[2]

Because one-quarter of military personnel are women, and conflict zone allocations are expensive, it would seem that some form of contraception would increase troop readiness.

Mother Was Right

When mothers insist that children eat their greens, they may well have scientific evidence to back them up. In addition to having a role in the prevention of cancer and cardiovascular disease, it seems that green, leafy vegetables guard against type 2 diabetes development.[3]

The prevalence of type 2 diabetes is reaching epidemic proportions as obesity increases, but lifestyle modifications can prevent two-thirds of cases. Reducing intake of total and saturated fat, increasing fruit, vegetables, and whole-grain